

**AMENDMENTS TO THE SPECIFICATION:**

Please amend the specification as follows:

Amend the paragraph beginning on page 12, line 12 to read as follows:

To achieve the above object, according to the present invention, there is provided a process for heating a thixocast Fe-based alloy material having a chilled structure into a semi-molten state in which solid and liquid phases coexist, wherein the average rate  $H_R$  of heating from ~~a normal~~ about a room temperature to a point  $A_1$  in an Fe-C based equilibrium diagram is set in a range of  $0.5\text{ }^{\circ}\text{C/sec} \leq H_R \leq 6.0\text{ }^{\circ}\text{C/sec}$ , and the maximum temperature gradient  $T_G$  of the inside of the Fe-based alloy material per unit distance is set at  $T_G \leq 7\text{ }^{\circ}\text{C/mm}$ .

Amend the paragraph beginning on page 36, line 16 to read as follows:

The Fe-based alloy material 50 was heated from ~~a normal~~ about a temperature to  $740\text{ }^{\circ}\text{C}$  (the point  $A_1$ ) at the average heating rate  $H_R$  set at  $2.9\text{ }^{\circ}\text{C/sec}$ ,  $4.7\text{ }^{\circ}\text{C/sec}$ ,  $6.4\text{ }^{\circ}\text{C/sec}$  and  $7.2\text{ }^{\circ}\text{C/sec}$ . The relationship between the average temperature of the material 50 and the difference  $\Delta T$  between the temperatures at the casting reference-temperature point P and the highest-temperature point Q was examined, thereby providing a result shown in Fig. 22. The term "average temperature" as used herein means an average value  $(T_E + T_F)/2$  of temperatures  $T_E$  and

$T_F$  at the points E and F. The maximum temperature gradient  $T_G$  was calculated from a maximum value of the temperature differences  $\Delta T$  and the distance  $d \approx 34$  mm between both the points E and F. The relationship between the maximum temperature gradient  $T_G$  and the average heating temperature  $H_R$  was examined, thereby providing a result shown in Fig. 23. When the average heating temperature  $H_R$  was set at  $4.7^\circ\text{C}/\text{sec}$  in this heating test, cracks were not generated in the Fe-based alloy material, but when the average heating rate  $H_R$  was set at  $6.4^\circ\text{C}/\text{sec}$ , cracks were generated in the Fe-based alloy material.